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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/726,895

**Applicant(s)**

KOBAYASHI, OSAMU

**Examiner**

KENAN CEHIC

**Art Unit**

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claim 1-4, 7-10, 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf et al (US 6,914,637 B1) in view of Yun (US 7,136,415) and Lyle et al (US 7,295,578).

For claim 1, Wolf discloses in a digital packet based multimedia system (see fig 2; source device, sink device) having a multimedia source device (see fig 2; source device) coupled to a multimedia display device (see Figure 2, reference 26 and 27) by way of a bi-directional auxiliary channel (see Figure 2, reference DDC (also note bidirectional arrows), and column 59 lines 30-34 for bidirectional, also note in column 2 Wolf in his definition of a DVI link expressively list the TMDS and DDC channel separately )

arranged to transfer information between the display device and a source device and vice versa (see column 59 lines 30-34 and see column 49 lines 18-23) and a unidirectional main link (see column 4 lines 57-66 and Figure 2 CH0-CHC, Wolf specifically defines that TMDS can be one-directional) arranged to carry multimedia data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) column 14 lines 30-38, for auxiliary data, which can be audio (see column 5, lines 63-67) and col 8 lines 8-45 "video data words...code words...data island...each packet") from the multimedia source device to the multimedia display device (see column 4 lines 57-66) each of the multimedia data packets includes at least a multimedia data packet header (see col 8 lines 30-62 "each packet...during a data island includes a N-bit packet header...packet header...header of each packet"), comprising: prior to commencement of transmission of the data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) column 14 lines 30-38, for auxiliary data, which can be audio (see column 5, lines 63-67) and col 8 lines 8-45 "video data words...code words...data island...each packet") from the source device to the display device (see fig 2) over the main link (see column 4 lines 57-66 and Figure 2 CH0-CHC, Wolf specifically defines that TMDS can be one-directional) , communicating via the auxiliary channel multi-media data packet stream attributes to the display device (see col 43 lines 4-30 "communicate with the receiver...over the DDC channel...initiate...setting up the transmitter...and the receiver...via the DDC channel...for HDCP encryption...causes the transmitter to encrypt data to be transmitted during active video periods and data islands" and col 46 line 6-50 "inform the receive of

the encryption mode chosen...HDCP..." and col 49 lines 17-25 "coupled to the DDC channel...communicate with the transmitter over the DDC channel...perform HDCP authentication...loading key value received from the transmitter over the DDC channel" and col 59 line 2-35 "2-bit codes are sent over a DDC link" and col 45 line 58 through col 46 line 5 "DDC...supports a particular type of HDCP...will operate in the data island mode...); wherein the data packet stream attributes includes information used by the display device to at least identify the data packets of a particular stream (see col 5 lines 5-25 "receiver...decrypting the received data ...decryption of the received data" and col 12 lines 46-63 "Receiver...stores key values and identification bits for use in HDCP decryption of content received" and col 26 lines 42-60 "receiver...decryption circuit...decrypts"), to recover original data from the data packet stream (see col 5 lines 5-25 "receiver...decrypting the received data ...decryption of the received data" and col 12 lines 46-63 "Receiver...stores key values and identification bits for use in HDCP decryption of content received" and col 26 lines 42-60 "receiver...decryption circuit...decrypts");; and attributes already communicated via the auxiliary channel device (see col 43 lines 4-30 "communicate with the receiver...over the DDC channel...initiate....setting up the transmitter...and the receiver...via the DDC channel...for HDCP encryption...causes the transmitter to encrypt data to be transmitted during active video periods and data islands" and col 46 line 6-50 "inform the receive of the encryption mode chosen...HDCP..." and col 49 lines 17-25 "coupled to the DDC channel...communicate with the transmitter over the DDC channel...perform HDCP authentication...loading key value received from the transmitter over the DDC channel"

and col 59 line 2-35 “2-bit codes are sent over a DDC link” and col 45 line 58 through col 46 line 5 “DDC...supports a particular type of HDCP...will operate in the data island mode...); streaming the multi-media data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) column 14 lines 30-38, for auxiliary data, which can be audio (see column 5, lines 63-67) and col 8 lines 8-45 “video data words...code words...data island...each packet”) having the data packet header (see col 8 lines 30-62 “each packet...during a data island includes a N-bit packet header...packet header....header of each packet”) from the source device to the display (see fig 2; source device, sink device); and

For claim 7, Wolf discloses in a digital packet based multimedia system (see fig 2; source device, sink device) having a multimedia source device (see fig 2; source device) coupled to a multimedia display device (see Figure 2, reference 26 and 27) by way of a bi-directional auxiliary channel (see Figure 2, reference DDC (also note bidirectional arrows), and column 59 lines 30-34 for bidirectional, also note in column 2 Wolf in his definition of a DVI link expressly list the TMDS and DDC channel separately ) arranged to transfer information between the display device and a source device and vice versa (see column 59 lines 30-34 and see column 49 lines 18-23) and a unidirectional main link (see column 4 lines 57-66 and Figure 2 CH0-CHC, Wolf specifically defines that TMDS can be one-directional) arranged to carry multimedia data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) column 14 lines 30-38, for auxiliary data, which can be audio (see column 5, lines 63-67) and col 8 lines 8-45 “video data words...code words...data island...each

packet”) from the multimedia source device to the multimedia display device (see column 4 lines 57-66) each of the multimedia data packets includes at least a multimedia data packet header (see col 8 lines 30-62 “each packet...during a data island includes a N-bit packet header...packet header....header of each packet”), comprising:  
means for communicating via the auxiliary channel (see fig 2; DDC) multi-media data packet stream attributes (see col 43 lines 4-30 “communicate with the receiver...over the DDC channel...initiate....setting up the transmitter...and the receiver...via the DDC channel...for HDCP encryption...causes the transmitter to encrypt data to be transmitted during active video periods and data islands” and col 46 line 6-50 “inform the receive of the encryption mode chosen...HDCP...” and col 49 lines 17-25 “coupled to the DDC channel...communicate with the transmitter over the DDC channel...perform HDCP authentication...loading key value received from the transmitter over the DDC channel” and col 59 line 2-35 “2-bit codes are sent over a DDC link” and col 45 line 58 through col 46 line 5 “DDC...supports a particular type of HDCP...will operate in the data island mode....) to the display prior to commencement of transmission of the data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) column 14 lines 30-38, for auxiliary data, which can be audio (see column 5, lines 63-67) and col 8 lines 8-45 “video data words...code words...data island...each packet”) from the source device to the display device (see fig 2) over the main link (see column 4 lines 57-66 and Figure 2 CH0-CHC, Wolf specifically defines that TMDS can be one-directional); wherein the data packet stream attributes includes information used by the display device to at least identify the data packets of a particular stream (see col 5

lines 5-25 "receiver...decrypting the received data ...decryption of the received data" and col 12 lines 46-63 "Receiver...stores key values and identification bits for use in HDCP decryption of content received" and col 26 lines 42-60 "receiver...decryption circuit...decrypts"), to recover original data from the data packet stream (see col 5 lines 5-25 "receiver...decrypting the received data ...decryption of the received data" and col 12 lines 46-63 "Receiver...stores key values and identification bits for use in HDCP decryption of content received" and col 26 lines 42-60 "receiver...decryption circuit...decrypts");; and attributes already communicated via the auxiliary channel device (see col 43 lines 4-30 "communicate with the receiver...over the DDC channel...initiate....setting up the transmitter...and the receiver...via the DDC channel...for HDCP encryption...causes the transmitter to encrypt data to be transmitted during active video periods and data islands" and col 46 line 6-50 "inform the receive of the encryption mode chosen...HDCP..." and col 49 lines 17-25 "coupled to the DDC channel...communicate with the transmitter over the DDC channel...perform HDCP authentication...loading key value received from the transmitter over the DDC channel" and col 59 line 2-35 "2-bit codes are sent over a DDC link" and col 45 line 58 through col 46 line 5 "DDC...supports a particular type of HDCP...will operate in the data island mode....");

means (see fig 2) for streaming the multi-media data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) column 14 lines 30-38, for auxiliary data, which can be audio (see column 5, lines 63-67) and col 8 lines 8-45 "video data words...code words...data island...each packet") having the data packet



header (see col 8 lines 30-62 “each packet...during a data island includes a N-bit packet header...packet header....header of each packet”) from the source device to the display concurrently (see fig 2; source device, sink device);

For claim 7, Wolf discloses in a digital packet based multimedia system (see fig 2; source device, sink device) having a multimedia source device (see fig 2; source device) coupled to a multimedia display device (see Figure 2, reference 26 and 27) by way of a bi-directional auxiliary channel (see Figure 2, reference DDC (also note bidirectional arrows), and column 59 lines 30-34 for bidirectional, also note in column 2 Wolf in his definition of a DVI link expressively list the TMDS and DDC channel separately ) arranged to transfer information between the display device and a source device and vice versa (see column 59 lines 30-34 and see column 49 lines 18-23) and a unidirectional main link (see column 4 lines 57-66 and Figure 2 CH0-CHC, Wolf specifically defines that TMDS can be one-directional) arranged to carry multimedia data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) column 14 lines 30-38, for auxiliary data, which can be audio (see column 5, lines 63-67) and col 8 lines 8-45 “video data words...code words...data island...each packet”) from the multimedia source device to the multimedia display device (see column 4 lines 57-66) each of the multimedia data packets includes at least a multimedia data packet header (see col 8 lines 30-62 “each packet...during a data island includes a N-bit packet header...packet header....header of each packet”), comprising: computer code (see fig 2; see col 96 lines 20-35 “programmed”; col 43 lines 10-20 “processor...programmed...system software”) for communicating via the auxiliary

channel (see fig 2; DDC) multi-media data packet stream attributes (see col 43 lines 4-30 “communicate with the receiver...over the DDC channel...initiate....setting up the transmitter...and the receiver...via the DDC channel...for HDCP encryption...causes the transmitter to encrypt data to be transmitted during active video periods and data islands” and col 46 line 6-50 “inform the receive of the encryption mode chosen...HDCP...” and col 49 lines 17-25 “coupled to the DDC channel...communicate with the transmitter over the DDC channel...perform HDCP authentication...loading key value received from the transmitter over the DDC channel” and col 59 line 2-35 “2-bit codes are sent over a DDC link” and col 45 line 58 through col 46 line 5 “DDC...supports a particular type of HDCP...will operate in the data island mode....) to the display prior to commencement of transmission of the data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) column 14 lines 30-38, for auxiliary data, which can be audio (see column 5, lines 63-67) and col 8 lines 8-45 “video data words...code words...data island...each packet”) from the source device to the display device (see fig 2) over the main link (see column 4 lines 57-66 and Figure 2 CH0-CHC, Wolf specifically defines that TMDS can be one-directional) ; wherein the data packet stream attributes includes information used by the display device to at least identify the data packets of a particular stream (see col 5 lines 5-25 “receiver...decrypting the received data ...decryption of the received data” and col 12 lines 46-63 “Receiver...stores key values and identification bits for use in HDCP decryption of content received” and col 26 lines 42-60 “receiver...decryption circuit...decrypts”), to recover original data from the data packet stream (see col 5 lines 5-25 “receiver...decrypting the received data

...decryption of the received data" and col 12 lines 46-63 "Receiver...stores key values and identification bits for use in HDCP decryption of content received" and col 26 lines 42-60 "receiver...decryption circuit...decrypts");; and attributes already communicated via the auxiliary channel device (see col 43 lines 4-30 "communicate with the receiver...over the DDC channel...initiate....setting up the transmitter...and the receiver...via the DDC channel...for HDCP encryption...causes the transmitter to encrypt data to be transmitted during active video periods and data islands" and col 46 line 6-50 "inform the receive of the encryption mode chosen...HDCP..." and col 49 lines 17-25 "coupled to the DDC channel...communicate with the transmitter over the DDC channel...perform HDCP authentication...loading key value received from the transmitter over the DDC channel" and col 59 line 2-35 "2-bit codes are sent over a DDC link" and col 45 line 58 through col 46 line 5 "DDC...supports a particular type of HDCP...will operate in the data island mode....");

computer code (see fig 2; see col 96 lines 20-35 "programmed"; col 43 lines 10-20 "processor...programmed...system software") for streaming the multi-media data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) column 14 lines 30-38, for auxiliary data, which can be audio (see column 5, lines 63-67) and col 8 lines 8-45 "video data words...code words...data island...each packet") having the data packet header (see col 8 lines 30-62 "each packet...during a data island includes a N-bit packet header...packet header...header of each packet") from the source device to the display concurrently (see fig 2; source device, sink device); computer readable medium for storing the computer code (see fig 13, 14).

For claim 2, 8 and 14, Wolf et al. discloses wherein the data packet is one of a number of associated multimedia data packets (see column 8 lines 9-14, video words are sent (word is generic bundle of data just like a packet) is defined as being data that take together form a multimedia data packet stream (see column 11 lines 37-39, stream is made out of same type of data, see column 7 lines 16-22 and column 8 lines 8-14 for sending of video stream).

For claim 3, 9 and 14, Wolf et al. teaches a multimedia data packet stream is one of a number of multimedia data packet streams (see column 13 lines 25-29 and Figure 8 and column 10 lines 35-40) each having an associated adjustable data stream link rate that is independent of the native stream rate (see columns 12 line 63 through column 13 line 25, a clock between the transmitter and receiver is provided so that transmission can happen at the rate of the video/audio stream).

For claim 4, 10 and 16, Wolf discloses a display interface as recited in claim 3, wherein the bi-directional auxiliary channel is formed of a uni-directional back channel configured to carry display related from the display device to the source device (figure 2 and column 50 lines 33-36) and a uni-directional forward channel included as part of the main link for carrying source related information from the source device to the display device in concert with the back channel (as seen from figure 2 and column 2 lines 31 -36 and column 2 lines 42-49).

Wolf is silent about:

For claim 1, a method of reducing multimedia packet overhead; and replacing the data packet header with a corresponding reduced size data packet header for each of the

multimedia data packets at the source device commensurate with the data packet stream attributes already communicated, and the reduced size data packet header; sending information associated with the streaming between the source device and the display device by way of the auxiliary channel concurrent with the streaming.

For claim 7, a method of reducing multimedia packet overhead; means for replacing the data packet header with a corresponding reduced size data packet header for each of the multimedia data packets at the source device commensurate with the data packet stream attributes already communicated; means for sending information associated with the streaming between the source device and the display by way of the auxiliary channel concurrent with the streaming

For claim 13, Computer readable medium encoded with a computer program and executable by a processor for reducing multimedia packet overhead; computer code for replacing the data packet header with a corresponding reduced size data packet header for each of the multimedia data packets at the source device commensurate with the data packet stream attributes already communicated; computer code for sending information associated with the streaming between the source device and the display by way of the auxiliary channel concurrent with the streaming

Lyle et al from the same field of endeavor discloses a system with the following features:

For claim 1, 7 Lyle discloses sending information associated with the streaming (see col 6 lines 4-15 “clock for recovering transmitted audio data...auxiliary data...text data, control signals...picture in picture data...non-audio or video control information”) between the source device and the display device by way of the auxiliary channel

concurrent with the streaming (see col 26 lines 29-45 “Any number...channels available in a conventional DVI link.... transmit auxiliary data...” and col 47 lines 44-65 “combination of channels for transmitting auxiliary data... auxiliary data clock or timing information..clock and control information for two or more audio data streams cab be setn...audio data cab be sent ...used for video data transmission..” and col 27 lines 5-30 “transmit auxiliary data...DDC lines” and col 38 lines 65 through col 39 line 6 “DDC”) For claim 7, Lyle discloses the means (see fig 6, 16, 19).

For claim 13, Lyle disclose the computer (see fig 6, 16, 19 and col 40 lines 14-30 “software...firmware”).

Yun from the same or similar field of endeavor discloses a method with the following features:

For claim 1, 7, Yun discloses a method of reducing multimedia packet overhead (see col 8 lines 45-51 “ minimize overlapped header information...using time information acquired from an encoded stream...to synchronize encoded streams of all remained”); and replacing the data packet header (see col 4 lines 22-51 “packetizer...finally packetizes the header..transmitted...” with a corresponding reduced size data packet header (see col 8 lines 45-51 “ minimize overlapped header information...using time information acquired from an encoded stream...to synchronize encoded streams of all remained”) for each of the multimedia data packets at the source device (see fig 6; 113 and fig 1; Transmitter) commensurate with the data packet stream attributes already communicated (see col 8 lines 45-51 “ minimize overlapped header information...using time information acquired from an encoded stream...to synchronize encoded streams of

all remained”), and the reduced size data packet header (see col 8 lines 45-51 “minimize overlapped header information...using time information acquired from an encoded stream...to synchronize encoded streams of all remained”)

For claim 7, Yun discloses the means (see fig 1).

For claim 13, Yun discloses the computer code (see col 2 lines 1-10 “computer readable recording medium...instruction” and col 2 lines 40-56 “computer readable recording medium...instruction”)

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Wolf by using the features, as taught by Kim and Yun, in order to provide a way to transmit many different streams of auxiliary data in important applications through multiple channels in a DVI or TMDS-link system (see Lyle col 6); in order to provide “an image data processing apparatus and method for providing choices of display modes to user and for performing appropriate processes of the multi-view three-dimensional moving pictures according to the user’s selection of display mode (see Yun col 1-2).

4. Claim 5, 6, 11, 12, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf et al (US 6,914,637 B1), Yun (US 7,136,415) and Lyle et al (US 7,295,578) and as applied to claim 1-4, 7-10, and 13-16 above, and further in view of Fuhrman (5,745,837):

For claim 5, 11, and 17 Wolf et, Yun, and Lyle al recites all the claimed limitation as described in paragraph 4. Wolf does not teach that the main link is consisting of virtual

links. Fuhrmann from the same or similar field of endeavor teaches a number of virtual links (see column 38 lines 6-8, each CPE is connected via virtual link) each being associated with a particular one of the multimedia data packet streams (see column 36, lines 13-18 , lines 25-28 ATM transports multimedia content in) wherein each of said virtual links has an associated virtual link bandwidth (see column 3 lines 46-55, the bandwidth for the virtual links, of each CPE, is allocated) and a virtual link rate (see column 56 lines 27-29 the rate of each virtual link is counted, see also column 49 line 60 to column 50 line 7, each CPE can have a varieties of rates and each CPE is connected via a virtual link). Thus it would have been obvious to a person of ordinary skill at the time the invention was made to incorporate the virtual link structure into the communication system as taught by Wolf et al. The virtual link architecture is an abstract idea thus it could have been implemented in the microcontroller of the source device (see Wolf et al. Figure 2, reference 15) via software. Thus one is able to implement the virtual link architecture into the system of Wolf et al. The motivation is that one is able to divide the single physical channel, in an organized manner to different source devices. Thus one can control how much bandwidth each source device gets.

### *Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
  - a. Kim et al. (6,151,334)
  - b. Rabenko et al. (US 6,765,931 B1)
  - c. Kou et al. (6,154,225)



The above-cited references are to show various video stream interfaces

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENAN CEHIC whose telephone number is (571)270-3120.

The examiner can normally be reached on Monday through Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KWANG BIN YAO can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenan Cehic/  
Examiner, Art Unit 2616

/Kwang B. Yao/  
Supervisory Patent Examiner, Art Unit 2616

